

REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated May 11, 2006. A Petition for Extension of Time (two months) and the fee therefor are submitted herewith.

Responsive to the comments concerning the Information Disclosure Statement, the applicant is content that the Examiner will check off those references that have been duly submitted and considered by the Patent Office.

Respecting the rejection of certain of the claims under 35 U.S.C. §112, first paragraph, and the rejection of claim 10 under the second paragraph of 35 U.S.C. §112, the claims, as amended, are respectfully submitted to overcome the indicated rejections and withdrawal thereof is respectfully requested.

Claims 10 and 16 stand rejected on grounds of anticipation by Lapatovich (JP 11-111238). The remaining claims 1-7, 11, 14, 15 and 17 stand rejected on grounds of obviousness over Lapatovich, in view of MacLennan (5,903,091). Reconsideration is requested in view of the amendments to the claims herein and the following remarks.

In accordance with independent claim 1, the claimed electrodeless lamp includes a bulb portion which defines on its interior, “a complete spherical shape” which, in turn, “defines a center”, and which is structured to be charged with the gas-filling generating plasma. The claimed “protruding portion” of independent claim 1, has a certain predetermined circular area and a height and, significantly, is located at the inner circumference of the bulb portion, namely where the inner circumference is at the plane which is at the center of the spherical shape. This is clearly observable in Figs. 5 and 6, which provide an example thereof.

Independent claim 16 is substantially the same as independent claim 1, except that the inner shape of the filling space is defined as having an “incomplete spherical shape”, and corresponds, for example, to the oval shape shown in Fig. 8. But, again, the protrusion portion is in a plane which substantially coincides with and contains the center of the geometrical structure, which defines the inner filling space.

Beginning at page 10, line 20 of the specification, the text explains the operation of the electrodeless lamp of the present disclosure, and makes it very clear that the specifically recited

shape and location of the “protruding portion” plays an important role and provides a unique functionality.

Normally, the centrifugal force generated due to the rotation of the lamp body causes the plasma to fail to form a perfect sphere. Instead, the plasma forms an “oval figure inclining to a vertical direction to a rotational axis”. The provision of the aforementioned protruding portion, shaped and located as defined in the independent claims of the present application, solves this problem of the prior art, by causing the plasma to form a more perfect spherical shape in the filling space of the bulb portion and, ultimately, a more evenly produced light emission from the bulb. This is an important function.

The protruding portion also provides a second benefit, as described at the top of page 12 of the instant specification.

Respectfully, neither the structure, nor the benefits, nor the operation of the inventions defined in independent claims 1 and 16, are anywhere disclosed or suggested in the prior art.

Turning to the references, the primary Lapatovich reference discloses neither a spherical filling space, nor the claimed protruding portion, which is formed as specifically recited in the claims and located at the specific location, i.e., at the center.

Rather, Lapatovich describes an inner space which has a generally elongate shape, generally defining within an elongate cylindrical space of a certain length and diameter. The inner orifice region 14 has an inner diameter which gradually decreases toward the longitudinal center of the inner space. The maximum constriction is at the center of the inner space. The purpose of this gradually decreasing inner diameter feature in Lapatovich, is to pressurize the filling material and to supply a high power density. That is the purpose provided by the central wall 21 of the capsule 12, which thickens and constricts the inner diameter over substantially the entirety of the length of the inner space, as clearly shown in several of the figures of Lapatovich, and certainly in Figs. 1 and 2.

The secondary MacLennan reference shows a spherical inner filling space but, similarly, does not show any protruding portion at all.

Neither of the two references identifies or describes the problem solved by the present invention, nor suggests its solution. Thus, the two independent claims clearly define over the

prior art. As to the dependent claims, they have specific features, such as provided, for example, in those claims which define a pair of protruding portions, diametrically opposed across the inner spherical or oval interior space. No comparable structure is shown in any of the prior art. Therefore, the dependent claims are patentable for the reasons given relative to independent claims 1 and 16 and due to their inclusion of their own special features that are not disclosed in the prior art.

Recapitulating, in the device of the present claims, the bulb portion is rotated to prevent even partial concentration of the hot plasma being formed at a particular portion of the bulb. To prevent the plasma inside the filling space of the bulb portion from assuming an uneven shape due to centrifugal forces, the protrusion portion or portions are so formed at the inner wall of the filling space and are so located relative to the interior and the center of the bulb portion, as to rotate together with the bulb portion and prevent the aforementioned undesirable effect.

That is, when the bulb portion is rotated, the plasma inside the filling space is subjected to the effect of the rotating and the action of the interiorly provided protruding portion, which causes the plasma to have a plasma distribution which is either precisely or very close to being spherically shaped. Stated differently, the combined effect of rotating the bulb and the protruding portion, and the location of the protruding portion, brings about this effect.

The Lapatovich device does not have the claimed structure, nor does it produce the effect discussed above. That is, since the orifice region 14 has an inner diameter which gradually decreases toward the center, it produces an effect which serves to pressurize the filling material and to supply a high powered density, thereby generating a high brightness. Also, the orifice region 14 of the capsule 12 has a relatively smaller inner diameter at the center of the inner space of the capsule 12, which produces a relatively thickened wall over a substantial of the inner space, thereby facilitating light emission.

If the capsule 12 of the Lapatovich is rotated, the filling material inside the inner space of the capsule is effectively divided into two portions on account of the elongate shape of the capsule 12, and the inner diameter of the orifice region of the capsule becomes relatively smaller than the other diameter of the inner space of the capsule. Both the structure and functionality of

this reference are entirely different than as claimed in the independent and dependent claims herein.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

THIS CORRESPONDENCE IS BEING
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Respectfully submitted,



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